

Listing of Claims:

1. (Previously presented) A battery separator, comprising:
a polymer web and a silica component;
the polymer web including fibrils of an ultrahigh molecular weight polyolefin of a molecular weight that provides sufficient molecular chain entanglement to impart high-strength mechanical properties to the polymer web, and the silica component imparting wettability properties to the separator; and
a coating substance including an antioxidant material impregnating the polymer web in an amount specified by an antioxidant material-to-ultrahigh molecular weight polyolefin weight ratio of greater than about 0.17, the coating substance forming sheaths around the polyolefin fibrils throughout the web to suppress polyolefin degradation and thereby maintain the high-strength mechanical properties.
2. (Original) The battery separator of claim 1, in which the antioxidant material includes (tetrakis[methylene(3,5-di-tert-butyl-4-hydroxyhydrocinnamate] methane).
- Claims 3 and 4 (Canceled).
5. (Previously presented) The battery separator of claim 1, in which the polymer web has a major surface on which the coating substance including an antioxidant material is present and in which the coating substance on the major surface of the polymer web is applied by a method selected from the group consisting essentially of brushing, spraying, immersion, and roller-based application.
6. (Previously presented) The battery separator of claim 1, in which the polymer web has first and second major surfaces and in which one of them is positioned adjacent an electrode structure to form a battery assembly into which is placed an electrolyte that is at least partly absorbed by the electrode structure.
7. (Previously presented) The battery separator of claim 1, in which the antioxidant material-to-ultrahigh molecular weight polyolefin weight ratio is no greater than about 1.71.